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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,701

09/29/2003

Randy Clinton Giles

72-24-4-16

2448

7590

09/01/2006

Docket Administrator (Room 3J-219)

Lucent Technologies Inc.

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EXAMINER

SINGH, DALZID E

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/673,701

Applicant(s)

GILES ET AL.

Examiner

Dalzid Singh

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the label processor as recited in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The disclosure is objected to because of the following informalities: paragraph [0019] recites "I", it appears that this should have been "It". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 9 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 9 recites, "...a label processor...". There is no structure or circuit diagram provided to teach a person of ordinary skill in the art how the label processor is provided or connected in the system. Therefore, based on this, the specification fails to provide an enabling disclosure for claim 9

Claim 16 recites, "...providing pulse generation to allow for generation of RZ DPSK payload signals". The disclosure does not provide structure or circuit diagram provided to teach a person of ordinary skill in the art how to provide RZ DPSK payload

signals. Therefore, based on this, the specification fails to provide an enabling disclosure for claim 16.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-7, 9-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vrazel et al (US Pub. No. 2003/0198478).

Regarding claim 1, Vrazel et al disclose an optical transmitter for generating optically signal, as shown in Fig. 4B, comprising:

a phase modulator (475) driven by a signal ( $D_2$ ) to provide DPSK modulation (see paragraphs [0030 and 0031]); and

an intensity modulator (470) coupled to the phase modulator, the intensity modulator being driven by a signal ( $D_1$ ) to provide ASK modulation (see paragraphs [0030 and 0031]).

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ )

which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ).

The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

Regarding claim 2, the phase modulator and the intensity modulator are modulators selected from the group consisting of a Mach-Zehnder modulator, a single-waveguide modulator or an electro-absorption modulator (see paragraphs [0036, 0058-0060]).

Regarding claims 3 and 14, Vrazel et al differs from the claimed invention in that Vrazel et al do not disclose the payload signal is a high speed signal having a data rate of greater than about 2.5 Gb/s and the label signal is a low speed signal having a data rate of less than about 1/4 of the data rate of the payload signal. However, it would have been obvious to an artisan of ordinary skill in the art to provide different speed of data rates.

Regarding claim 5, shown in Fig. 4B, a differential encoder (405) coupled to the phase modulator.

Regarding claim 6, Vrazel et al disclose an optical transmitter for generating optically signal, as shown in Fig. 4B, comprising:

a transmitter for generating optically signal, the transmitter including a phase modulator (475) driven by signal ( $D_2$ ) to provide DPSK modulation (see paragraphs [0030 and 0031]); and

an intensity modulator (470) coupled to the phase modulator, the intensity modulator being driven by a signal ( $D_1$ ) to provide ASK modulation (see paragraphs [0030 and 0031]).

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ ) which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ). The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

Regarding claim 7, a receiver including a balanced detector for detection of the DPSK modulated optically signal (see paragraph [0075]).

Regarding claim 9 (as far as understood in view of the 112 1<sup>st</sup> paragraph), as shown in Fig. 9, Vrazel et al show the system further comprise detector for processing the signal. (The clause "adapted to" is essentially a statement of intended or

desired use. Thus, these claims do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ 641; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 512 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647).

Regarding claim 10, Vrazel et al disclose an optical transmitter for generating optically signal, as shown in Fig. 4B, comprising:

a transmitter including at least two modulators (470 and 475) adapted to provide DPSK modulation and ASK modulation (see paragraphs [0030 and 0031]); and  
a receiver including a balanced detector (see Fig. 9).

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ ) which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ). The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

The clause "adapted to" is essentially a statement of intended or desired use. Thus, these claims do not serve to patentably distinguish the claimed



structure over that of the reference. See *In re Pearson*, 181 USPQ 641; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 512 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

Regarding claim 11, Vrazel et al disclose method for transmission of optical signal, as shown in Fig. 4B, comprising:

modulating light from a laser source using DPSK modulation and ASK modulation (see paragraphs [0030 and 0031]).

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ ) which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ). The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

Regarding claim 12, as shown in Fig. 6, the system further comprising receiving the optically signal using a balanced detector to detect the data signals.

Regarding claim 13, shown in Fig. 4, wherein modulating the light from the laser source (Laser) is performed using a phase modulator (475) and an intensity modulator

(470), the modulators selected from the group consisting of a Mach-Zehnder modulator, a single-waveguide modulator or an electro-absorption modulator (see paragraphs [0036, 0058-0060]).

Regarding claim 16 (as far as understood in view of the 112 1<sup>st</sup> paragraph), Vrazel et al disclose generation of DPSK signal and differ from the claimed invention in that Vrazel et al do not disclose generation of RZ DPSK signals. However, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide to generate RZ DPSK signals.

Regarding claim 17, Vrazel et al disclose an optical transmitter for generating optically signal, as shown in Fig. 4B, comprising:

a first modulator means (475) driven by a signal to provide DPSK modulation (see paragraphs [0030 and 0031]); and

an second modulator means (470) coupled to the first modulator means, the second modulator means being driven by a signal to provide ASK modulation (see paragraphs [0030 and 0031]).

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ ) which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ). The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's

invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

Regarding claim 18, Vrazel et al disclose an optical transmitter for generating optically signal, as shown in Fig. 4B, comprising:

means (470 and 475) for modulating light from a laser source (Laser) using DPSK modulation and ASK modulation.

Vrazel et al disclose DPSK modulation by signal ( $D_2$ ) and ASK modulation by signal ( $D_1$ ) and differs from the claimed invention in that Vrazel et al do not specifically that signal ( $D_2$ ) and signal ( $D_1$ ) represent payload portion and label portion of the signal respectively. As shown in Fig. 4B, Vrazel et al show precoder receiving the signal ( $D_2$ ) which drives the phase modulator and the phase modulator is driven by signal ( $D_1$ ). The structure shown in Fig. 4B is similar to the structure shown in Fig. 1 of applicant's invention. The only difference is that the signal ( $D_2$  and  $D_1$ ) is not represented as payload portion and label portion. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to represent such data signals ( $D_2$  and  $D_1$ ) as payload and label portion.

7. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vrazel et al (US Pub. No. 2003/0198478) in view of Chi et al in the article "Transmission Performance of All-optically labeled Packets using ASK/DPSK Orthogonal Modulation".

Regarding claims 4 and 15, Vrazel et al disclose ASK modulation as discussed above, and differ from the claimed invention in that Vrazel et al do not disclose that the extinction ratio of the ASK modulation is between about 2 dB and about 8 dB. Chi et al teach the use of ASK modulation with extinction ratio of 3 dB (see page 51, 1<sup>st</sup> col. 2<sup>nd</sup> paragraph). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide such ASK modulation with such extinction ratio. One of ordinary skill in the art would have been motivated to do such in order to reduce noise and improve performance.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vrazel et al (US Pub. No. 2003/0198478) in view of Blumenthal (US Pub. No. 2002/0071152).

Regarding claim 8, Vrazel et al differ from the claimed invention in that Vrazel et al do not disclose a wavelength converter for providing wavelength conversion of the optically labeled packets using a four-wave-mixing process while maintaining the phase and amplitude of the optically labeled packets. Blumenthal teaches the use of wavelength conversion (see paragraph [0008]). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide such wavelength converter to the system of Vrazel et al. One of ordinary skill in the art

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would have been motivated to do such in order to provide increased transmission rate routing.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Epworth (US Patent No. 6,626,589) is cited to show optical packet switching.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS

August 29, 2006

*David Singh*